

Greenwater Valley Groundwater Basin

- Groundwater Basin Number: 6-84
- County: Inyo
- Surface Area: 59,900 acres (93.6 square miles)

Basin Boundaries and Hydrology

This basin underlies much of Greenwater Valley, which is a northwest trending valley within Death Valley National Park, in southeastern Inyo County. Elevation of the valley floor above sea level ranges from about 2,600 at the southern terminus to about 5,000 feet near the edges of the valley. The basin is bounded by nonwater-bearing rocks of the Black Mountains on the west, the Greenwater Mountains on the east, and the Funeral Mountains on the north. The basin is bounded by a drainage divide in Deadman Pass on the southeast and a bedrock constriction near Miller Spring on the south. The bordering mountains range in elevation from about 5,700 feet in the Black Mountains to about 4,900 feet in the Greenwater Mountains (Jennings and others 1962; USGS 1987a, 1988).

Annual average precipitation ranges from about 3 to 6 inches. Surface runoff derived from occasional rainstorms in the surrounding mountains drains towards the central axis of the valley. An east-trending drainage divide located approximately midway up the northern half of the valley, directs the flow of runoff either northwest towards Death Valley by way of Furnace Creek Wash, or southeast towards the Amargosa River at Tecopa by way of an unnamed series of washes. A portion of runoff south of the drainage divide is captured and conveyed north through Greenwater Canyon and east toward Death Valley Junction in Amargosa Valley (Jennings 1958; USGS 1984, 1985, 1987b).

Hydrogeologic Information

Water Bearing Formations

Quaternary alluvium is the water-bearing material that forms the groundwater basin and includes unconsolidated younger alluvial deposits and underlying unconsolidated to semi-consolidated older alluvial deposits (DWR 1964).

Recharge and Discharge Areas

Recharge to the basin is derived primarily from the percolation of storm runoff through alluvial fan deposits at the base of the surrounding mountains. Groundwater likely moves, as does surface flow, towards the central axis of the basin prior to discharging either northwest beneath Furnace Creek Wash to Death Valley, or southeast to the Middle Amargosa Valley Groundwater Basin near Tecopa. A small portion of groundwater may discharge north beneath Greenwater Canyon to the Middle Amargosa Valley Groundwater Basin near Death Valley Junction (DWR 1964; Hunt and others, 1966)

Groundwater Level Trends

There are no historical records of wells or groundwater levels in the basin.

Groundwater Storage

Groundwater Storage Capacity. Unknown.

Groundwater in Storage. Unknown.

Groundwater Budget (C)

Groundwater budget information is not available.

Groundwater Quality

Characterization. There are no historical records of chemical analyses of groundwater from springs or wells in the basin.

Impairments. Unknown.

Well Production characteristics

| Well yields (gal/min) | |
|-----------------------|--|
| Municipal/Irrigation | |
| Total depths (ft) | |
| Domestic | |
| Municipal/Irrigation | |

Active Monitoring Data

| Agency | Parameter | Number of wells /measurement frequency |
|---|--------------------------------|---|
| | Groundwater levels | |
| | Miscellaneous water quality | |
| Department of Health Services and cooperators | Title 22 water quality | |

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

- California Department of Water Resources (DWR). 1964. *Ground Water Occurrence and Quality Lahontan Region*. Bulletin No.106-1. 439 p.
- Hunt, C.B. , T.W. Robinson, W.A. Bowles, and A.L. Washburn. 1966. *Hydrologic Basin Death Valley California*. U.S. Geological Survey Professional Paper 494 – B. 137 p.
- Jennings, C.W. 1958. *Geologic Map of California: Death Valley Sheet*. Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000.

- Jennings, C. W. , J. L. Burnett, B. W. Troxel. 1962. *Geologic Map of California: Trona Sheet*. Olaf P. Jenkins Edition. California Department of Conservation, Division of Mines and Geology. Scale 1: 250,000
- U.S. Geological Survey. 1984. *Shoshone, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.
- U.S. Geological Survey. 1985. *Salsberry Peak, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.
- U.S. Geological Survey. 1987a. *Deadman Pass, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.
- U.S. Geological Survey. 1987b. *Greenwater Canyon, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.
- U.S. Geological Survey. 1988. *Ryan, California*. 7.5' Quadrangle. Provisional Edition. Scale 1: 24,000.

Additional References

- Mendenhall, W.C., 1909. *Some Desert Watering Places in Southeastern California and Southwestern Nevada*. U. S. Geological Survey, Water-Supply Paper 224. 98 p.
- Miller, G. A., 1977. *Appraisal of the Water Resources of Death Valley, California-Nevada*. U. S. Geological Survey, Open-File Report 77-728. 68 p.

Errata

Changes made to the basin description will be noted here.